260

RECEIVED

81 JAN 20 A10:40

DEPT. OF LAND
& NATURAL RESOURCES
STATE OF HAWAII

Geothermal Lease Application

and

Narrative Statement Supporting Issuance of Geothermal Lease

BARNWELL GEOTHERMAL CORPORATION

January 20, 1981

I. GEOTHERMAL LEASE APPLICATION

Barnwell Geothermal Corporation hereby submits this application for a direct geothermal mining lease pursuant to the provisions of Chapter 182, Hawaii Revised Statutes.

1. Applicant: Barnwell Geothermal Corporation ("BGC"), a Hawaii corporation, whose principal place of business is located at 2828 Paa Street, Suite 2085, Honolulu, Hawaii 96819. BGC is the general partner of Barnwell Geothermal Program, a Hawaii limited partnership and is an 80% owned subsidiary of Barnwell Industries, Inc., a publicly-owned Delaware corporation. BGC is the assignee of the occupier rights on the property proposed to be leased, pursuant to Section 182-5, Hawaii Revised Statutes.

2. Land Owners: J. T. Trading Company, Ltd., Auto Imports of Hawaii, Inc., and Promised Land Corporation.

3. Lands Proposed to be Leased: Those parcels situate at Kapoho, Kaniahiku, Pohoiki and Keahialaka, District of Puna, Island of Hawaii, depicted on the map submitted herewith and more particularly described in Exhibit "A" attached hereto.

4. Approximate Area: 809 acres.

5. Term: Primary term, ten years, subject to extension to a maximum of sixty-five years.

6. Proposed Use: Geothermal exploration and development and evaluation of the potential of the Puna geothermal reservoir. A description of the known and potential geothermal resource desired to be leased is attached hereto as Exhibit "B". A preliminary proposal and plan for geothermal exploration and development is set forth in Part II, Paragraph 3.

7. Environmental Assessment: Environmental baseline studies undertaken by Hawaii Geothermal

Project cover an area one mile in radius around the HGP-A geothermal well and indicate this area is relatively impervious to adverse environmental consequences from geothermal development. Additional air quality baseline studies are continuing to sample the levels of hydrogen sulfide, sulfur dioxide, sulfuric acid, and mercury in the air throughout the Puna District. An evaluation of the environmental impact of the proposed development is attached hereto as Exhibit "C".

8. Mineral Rights: Expressly reserved to the State of Hawaii in Royal Patent No. 4497 on Land Commission Award No. 8559 and in Royal Patent Grant No. 3209. Land Patent No. 8094 on Land Commission Award No. 8559-B, Apana 15, contains no express reservation but is classified by the State of Hawaii as being subject to an implied mineral reservation. Land Patent Grant No. 13,156 contains no mineral reservation. Due to the existence of disputed claims to ownership of the geothermal resources, Geothermal Exploration and Development Corp., an affiliate of BGC, has obtained a lease of geothermal rights from the landowners named above. BGC submits this application without prejudice to the right of any party to claim ownership of the resources in question.

II. NARRATIVE STATEMENT SUPPORTING ISSUANCE OF GEOTHERMAL LEASE

1. Financial Resources and Preliminary Financing Plan: BGC's sole present activity is to serve as general partner of Barnwell Geothermal Program, a Hawaii limited partnership. The partnership was initially capitalized in excess of $3,000,000.00, of which the general partner contributed 25%. The partnership agreement affords the limited partners the opportunity to participate with the general partner in additional exploration and development activities in the Puna area. Barnwell Industries, Inc., BGC's parent company, has indicated that it is prepared to advance, through loans or other means, such funds to the partnership as may become necessary to explore the geothermal potential

of the Puna area fully. Photocopies of the Barnwell Industries, Inc. consolidated statements of operations, consolidated balance sheets, consolidated statements of changes in financial position and the notes attendant thereto, excerpted from the company's report to the Securities and Exchange Commission on Form 10-K for the fiscal year ended September 30, 1980, are attached hereto as Exhibit "E".

2. Experience and Technical Expertise: Barnwell Industries, Inc., has been engaged in the business of exploring for, developing, producing and selling gas, oil and coal throughout the United States and Canada for over 30 years. Water Resources International, Inc., BGC's drilling contractor and affiliate, is the major contractor in the State of Hawaii for both private and governmental water projects. Water Resources has been involved in water well drilling and maintenance in Hawaii for over 20 years and was the drilling contractor for all geothermal wells in Hawaii since 1970, including the successful HGP-A well. Geothermal Exploration and Development Corp., another affiliate of BGC, pioneered the field of geothermal exploration and development in Hawaii and has been active in this area for over 10 years. BGC's technical consultant on geothermal matters is Geothermex. Geothermex was founded in 1973 and is comprised of earth scientists and engineers specializing in geothermal exploration and development.

3. Plan for Exploration and Development: It is BGC's intention to drill a series of at least six exploratory geothermal wells within the next two years to a depth sufficient to test the resource--approximately 7,000 feet. Special permits from the County of Hawaii have been obtained authorizing drilling operations at six drill sites in the vicinity of the HGP-A geothermal well. If BGC is successful in locating a geothermal resource of commercial quality, it will seek government financing under the federal loan guaranty program and hopes to construct a 10 to 25 megawatt power plant before 1985. If the geothermal reservoir permits, BGC will add generating capacity as energy requirements, either from utilities or private industries, dictate.

In addition to drilling exploratory and production wells, BGC will also conduct recharged infiltration tests to provide the necessary data to design injection wells which may be necessary for overall system efficiency.

4. Summary of Public Benefits:

(a) Rationale for Issuance of a Direct Lease -- BGC and its affiliates are in an unparallelled position to develop the geothermal resources of the Puna District. Geothermal Exploration and Development Corp. holds leases from landowners to the east, south and southeast of the successful HGP-A well. In order to make a definitive determination of the extent of the geothermal reservoir, it is imperative that offset wells be drilled on these properties. Moreover, Barnwell Industries holds options to purchase the surface rights to several parcels of land which are extremely well situated for use as generating plant sites.

In addition to holding uniquely favorable leasehold and option rights, BGC is the only geothermal developer with a drilling rig and crew presently located in Hawaii. Thus, BGC has the singular ability to proceed immediately with exploration of the resource.

Finally, BGC and its affiliates have repeatedly demonstrated their willingness to work cooperatively so that many interests may share the benefits of Hawaii's geothermal resources. BGC has, for instance, agreed to provide the State with effluent from its first well, at no charge, in order to promote the State's direct use research program. Similarly, BGC has agreed to share with the University of Hawaii all information that it obtains which will assist the university in its studies. These facts, in conjunction with BGC's pricing philosphy described below and its recognized expertise in geothermal matters, demonstrate that issuance of a direct lease is appropriate.

(b) Effect on Local Energy Resource Capability — If, as BGC hopes, a geothermal reservoir capable of producing 10 to 25 megawatts is isolated, the Island of Hawaii would be virtually energy self-sufficient given its present electricity. However, the attraction of reduced energy rates will undoubtedly create a greater market for electricity. BGC is prepared to expand its generating capacity as the requirements of the market dictate.

(c) Effects on Local Employment -- BGC's geothermal program promises to provide increased and better employment opportunities to Hawaii residents. Local residents were trained to work on the drilling crew for the Opihikau geothermal well. It is anticipated that this training program will ultimately provide experienced local drilling crews and eliminate the need to hire mainland employees. Even more importantly, as industry is attracted to Hawaii by the prospect of reduced energy rates, many new jobs for Hawaii residents will be created.

(d) Consumer Energy Rates-- Although under the Public Utility's Resources Pricing Act, BGC could insist that geothermally generated electricity be priced at the prevailing rate for fossil fuels, it is our philosophy that the geothermal resources developed by us should be available at less than the market price for fossil fuels in order that Hawaii's residents share the benefits this resource generates.

(e) Statewide and Long Range Benefits -- As an island state, Hawaii is peculiarly vulnerable to shortages of fossil fuels and instabilities in supply and demand. Issuance of the state lease will assist Hawaii in developing a secure energy source and in achieving its stated goal of energy self-sufficiency. Moreover, the information derived from the exploration and evaluation activities will assist the State in planning for its long range energy needs. Finally, since the well being of the State and its residents is too often dependent upon the prosperity of only a few industries, the diversification of industries likely to result from development of the geothermal resource have a stabilizing and beneficial effect on the State's economy.

Respectfully submitted,

BARNWELL GEOTHERMAL CORPORATION

E. C. Craddick
President

DESCRIPTION OF PROPERTY

1. All that certain tract of land situated in the District of Puna, County of Hawaii, State of Hawaii, comprising:

Tax Map Key 1-3-08(6)
Tax Map Key 1-3-08(7)
Tax Map Key 1-3-08(19)
Tax Map Key 1-3-09(7)

Being a portion of the lands described in and covered by Royal Patent Grant Number 3209 to Robert Rycroft and Land Patent Number 8094, Land Commission Award 8559-B Apana 15 to William C. Lunalilo.

2. All that certain tract of land situated in the District of Puna, County of Hawaii, State of Hawaii comprising Tax Map Key 1-4-1(20) and being a portion of Land Patent Grant Number 13,156 and Royal Patent Number 4497, Land Commission Award Number 8559, Apana 15 to C. Kanaina, Land Patent Number 8177.

3. All those certain lots situate in the District of Puna, County of Hawaii, State of Hawaii delineated on the map entitled "Lanipuna Gardens Increment I" filed in the Bureau of Conveyances of the State of Hawaii on August 2, 1973, as File Plan No. 1340 and bearing the following lot and block numbers and tax map keys:

BLOCK	LOT	TAX MAP KEY
1	2	1-3-46:2
1	3	1-3-46:3
1	4	1-3-46:4
1	5	1-3-46:5
1	13	1-3-46:13
1	14	1-3-46:14
1	15	1-3-46:15
1	16	1-3-46:16
1	17	1-3-46:17
1	18	1-3-46:18
1	19	1-3-46:19
1	20	1-3-46:20
1	21	1-3-46:21

BLOCK	LOT	TAX MAP KEY
1	22	1-3-46:22
1	23	1-3-46:23
1	24	1-3-46:24
1	25	1-3-46:25
2	1	1-3-46:76
2	3	1-3-46:78
2	4	1-3-46:79
2	6	1-3-46:81
2	7	1-3-46:82
2	9	1-3-46:84
2	46	1-3-46:52
2	47	1-3-46:53
2	48	1-3-46:54
2	49	1-3-46:55
2	50	1-3-46:56
2	51	1-3-46:57
2	52	1-3-46:58
2	53	1-3-46:59
2	54	1-3-46:60
2	55	1-3-46:61
2	56	1-3-46:62
2	57	1-3-46:63
2	58	1-3-46:64
2	59	1-3-46:65
2	60	1-3-46:66
2	61	1-3-46:67
2	62	1-3-46:68
2	63	1-3-46:69
2	64	1-3-46:70
2	65	1-3-46:71
2	66	1-3-46:72
2	67	1-3-46:73
2	68	1-3-46:74
3	4	1-3-46:29
3	5	1-3-46:30
3	8	1-3-46:33
3	9	1-3-46:34
3	10	1-3-46:35
3	11	1-3-46:36
3	12	1-3-46:37
3	13	1-3-46:38
3	14	1-3-46:39
3	15	1-3-46:40
3	16	1-3-46:41
3	17	1-3-46:42

BLOCK	LOT	TAX MAP KEY
3	18	1-3-46:43
3	19	1-3-46:44
3	20	1-3-46:45
3	21	1-3-46:46
3	22	1-3-46:47
3	23	1-3-46:48
5	1	1-3-46:49
5	2	1-3-46:50
5	3	1-3-46:51
7	9	1-3-45:9
7	10	1-3-45:10
7	14	1-3-45:14
7	16	1-3-45:16
7	17	1-3-45:17
8	12	1-3-45:25
8	15	1-3-45:22
8	16	1-3-45:21
8	19	1-3-45:18

KNOWN AND POTENTIAL GEOTHERMAL RESOURCES

The southern part of the Island of Hawaii is dominated by an asymmetrical shielf volcano (Kilauea) and its associated east rift zones. The active East Rift of Kilauea, which passes through the Puna District as a linear zone approximately 3 mile inland from the coast, was recently proved prospective for geothermal resources at a site drillled by the Hawaii Geothermal Project (HGP) near Kapoho. The HGP-A well is located adjacent to the lands cited in this application. That well yielded temperatures and pressures from a geothermal reservoir capable of generating up to 3 megawatts of electrical power-- a resource of commercial significance. The HGP-A wellsite was selected on the basis of geophysical anomalies together with other evidence. Similar anomalies exist at other locations along the East Rift Zone from kilauea Crater to Cape Kumukahi, and establish a geothermal resource potential on the property proposed to be leased.

Geophysical studies indicate that the geothermal reservoir tapped by the HGP-A well extends in an elliptical fashion around the well. However, in order to make a definitive determination of the existing reservoir boundary, exploratory wells must be drilled.

ECOTROPHICS

To: Planning Commission, County of Hawaii

The undersigned, a partner in Ecotrophics, is environmentally familiar with those parts of the Puna District currently of interest for geothermal resource exploration. This includes the area within an arc of approximately 3 miles radius extending from the ENE (toward Kapoho) to due S. of Lava Tree Monument (toward Opihikao). Within this area of ca 28 sq. mi., about 4 sq. mi., or 14% has been intensively sampled ornithologically, botanically, ecologically, geochemically and archaeologically. Environmental baselines have been determined for HGP-A (Univ. of Hawaii), Ashida (GEDCO) and Daiichi-Seiko (GEDCO) prospects. The results of these are available in a series of reports including

a. Revised Environmental Impact Statement for the Hawaii Geothermal Research Station Utilizing the HGP-A Well at Puna, Island of Hawaii. 22 March 1978.

b. Hawaii Energy Resource Overviews. Work done under a grant from the U.S. Department of Energy by contract (#3415609) through the Lawrence Livermore Laboratory of the University of California. B.Z. Siegel, Project Manager. Hawaii Natural Energy Institute and the Pacific Biomedical Research Center, University of Hawaii. In 7 Volumes, June 1980.

c. Env. Baseline Reports prepared for GEDCO by Ecotrophics on 20 March 1980 and 20 September 1980.

On the basis of 11 years experience in the study of the environmental impacts of natural geothermal processes in Hawaii and over 5 years experience at HGP-A I submit herewith the following recommendations in re the current GEDCO request for permission for geothermal exploration at the well field consisting of portions of L.P. 8094, L.C. Aw 8559-B, Apana 15 to Wm C. Lunalilo and Grant 3209 to Rubert Rycroft, Keahialaka and Pohoiki, Puna Hawaii.

In as much as one-half of the sites proposed for drilling lie within 0.15 mi. of intensely studied areas and the remainder within 0.36 mi. or less of those aforementioned, well characterized areas, there are no hazardous or adverse impacts anticipated from the activities and operations prior to actually contacting geothermal fluid at depth and bringing hot water, steam, gases and dissolved solids to the surface.

And inas much as the necessary baseline studies for future assessment of environmental degradation is in progress and will be completed by Ecotrophics within 30 days following this hearing date of 17 December, 1980, I recommend that permission be granted GEDCO to carry out the exploratory drilling program as proposed.

RECEIVED
DEC 1 1980
WATER RESOURCES
INTERNATIONAL, INC.

Respectfully submitted,

Sanford W. Siegel

10 December, 198(

EXHIBIT "C"

<u>CERTIFICATE PER H.R.S. 182, RULE 4 - 4.2d</u>

This is to certify that Barnwell Geothermal Corporation is a registered corporation incorporated in the State of Hawaii, and does not hold, own geothermal resources in the State of Hawaii or control any lease, approved transfer of lease, directly any divided or undivided interest in any geothermal resource in the State of Hawaii in excess of 80,000 undeveloped acres.

Further, we hereby certify that Edgar C. Craddick is President of Barnwell Geothermal Corporation and that he is authorized to sign this application on behalf of Barnwell Geothermal Corporation.

DATED: January 19, 1981

BARNWELL GEOTHERMAL CORPORATION

By Andrew F. Blumenthal
Andrew F. Blumenthal
Vice President

EXHIBIT "D"

BARNWELL INDUSTRIES, INC.

AND SUBSIDIARIES

CONSOLIDATED BALANCE SHEETS

ASSETS	September 30, 1980	September 30, 1979
CURRENT ASSETS:		
Cash (includes certificates of deposit of $300,000 and $431,000, respectively)	$ 1,175,782	$ 814,010
Notes and accounts receivable, less allowance for doubtful accounts of $19,547 and $15,447, respectively	2,236,510	872,170
Foreign taxes receivable (Note 7)	1,552,083	380,863
Prepaid expenses and other	685,692	108,932
Current assets of discontinued coal operations (Note 4)	1,063,683	1,563,404
TOTAL CURRENT ASSETS	6,713,750	3,739,379
OTHER ASSETS:		
Notes receivable, less current maturities	470,627	580,893
Organizational costs and other (Notes 1 and 3)	1,467,591	42,938
	1,938,218	623,831
PROPERTY AND EQUIPMENT (Notes 1 and 5):		
Land and buildings	35,250	25,135
Oil and gas properties, at full cost	14,192,594	11,704,059
Geothermal properties	1,022,743	-
Drilling rigs and equipment	2,996,341	-
Other property and equipment	547,463	365,318
	18,794,391	12,094,512
Accumulated depletion, depreciation, amortization and valuation allowance	3,699,482	2,965,528
	15,094,909	9,128,984
Noncurrent assets of discontinued coal operations (Notes 1 and 4)	3,648,992	3,660,345
	$27,395,869	$17,152,539

LIABILITIES AND OWNERSHIP	September 30, 1980	September 30, 1979
CURRENT LIABILITIES:		
Notes payable to bank (Note 5)	$ 525,784	$ 550,000
Accounts payable	1,567,854	534,347
Income taxes	1,589,544	591,270
Accrued interest, expenses and other	568,615	247,634
Provision for operating losses from discontinued coal operation (Note 4)	450,000	-
Payable to joint interest owners	668,392	521,619
Current portion of long-term debt (Note 5)	852,652	961,600
TOTAL CURRENT LIABILITIES	6,222,841	3,406,470
LONG-TERM DEBT (Note 5)	16,230,763	10,582,682
DEFERRED PRODUCTION REVENUE (Note 6)	1,614,832	709,593
DEFERRED INCOME TAXES (Note 7)	3,228,436	2,857,704
MINORITY INTEREST IN SUBSIDIARIES (Note 3)	726,299	-
COMMITMENTS AND CONTINGENCIES (Notes 5 and 9)		
OWNERSHIP (Notes 2, 3 and 8):		
Common stock, par value $.50 a share: Authorized, 4,000,000 shares Issued, 1,609,297 and 1,599,297 shares, respectively	804,649	799,649
Additional paid-in capital	3,303,591	3,026,141
Retained earnings (deficit)	(2,205,439)	(915,847)
Treasury stock, at cost, 250,297 and 340,297 shares, respectively	(2,530,103)	(3,313,853)
	(627,302)	(403,910)
	$27,395,869	$17,152,539

See notes to consolidated financial statements

BARNWELL INDUSTRIES, INC.

AND SUBSIDIARIES

CONSOLIDATED STATEMENTS OF OPERATIONS

	Year ended September 30, 1980	1979
Operating revenues:		
Oil and gas sales	$ 4,645,649	$ 4,245,052
Contract drilling revenues (Note 3)	2,488,383	-
Other and interest income (Note 3)	738,105	217,011
	7,872,137	4,462,063
Costs and expenses:		
Oil and gas production expenses	1,237,933	1,047,445
Contract drilling costs (Note 3)	1,700,569	-
General and administrative expenses	1,173,147	1,023,146
Depletion, depreciation and amortization	771,909	644,073
Valuation allowance	-	116,003
Interest expense	1,575,266	989,523
Currency translation (gain)/loss and other	(4,774)	35,648
Minority interest in earnings (Note 3)	60,549	-
	6,514,599	3,855,838
Earnings from continuing operations before income taxes	1,357,538	606,225
Provision for income taxes (Note 7)	124,569	436,290
Earnings from continuing operations	1,232,969	169,935
Discontinued coal operations (Note 4):		
Operating losses	(2,072,561)	(478,885)
Provision for operating losses during phase-out period and cost of disposal	(450,000)	-
Loss from discontinued coal operations	(2,522,561)	(478,885)
NET LOSS	$(1,289,592)	$ (308,950)
Net earnings/(loss) per common share:		
Continuing operations	$ .95	$ .13
Discontinued operations	(1.95)	(.38)
NET LOSS	$(1.00)	$ (.25)

See notes to consolidated financial statements

BARNWELL INDUSTRIES, INC.
AND SUBSIDIARIES

CONSOLIDATED STATEMENTS OF CHANGES IN FINANCIAL POSITION

	Year ended September 30, 1980	Year ended September 30, 1979
SOURCES OF FUNDS:		
Income from continuing operations	$ 1,232,969	$ 169,935
Items not requiring working capital:		
Depletion, depreciation and amortization	771,909	644,073
Deferred income taxes	370,732	367,505
Valuation allowance	-	116,003
Minority interest in earnings	60,549	-
Long-term foreign currency translation gain	(4,409)	(36,883)
Funds provided from continuing operations	2,431,750	1,260,633
Loss from discontinued coal operations (Note 4)	(2,522,561)	(478,885)
Depletion, depreciation and amortization	299,297	269,508
Funds used by discontinued coal operations	(2,223,264)	(209,377)
Funds provided by operations	208,486	1,051,256
Increase in deferred production revenue	905,239	265,085
	1,113,725	1,316,341
Additions to long-term debt	10,104,177	9,026,910
Issuance of common stock (Notes 3 and 8)	1,327,500	101,250
Undepreciated cost of properties and equipment sold	901,476	166,866
Decrease/(increase) in notes receivable and other long-term	238,800	(209,715)
Investment in subsidiary by minority interest	131,250	-
Working capital of subsidiaries at date of acquisition	121,801	-
	13,938,729	10,401,652
APPLICATION OF FUNDS:		
Additions to property and equipment	4,865,059	1,300,820
Reduction of long-term debt	4,529,820	8,518,752
Acquisitions of subsidiaries	2,558,000	-
Increase in organizational costs and other assets	1,566,550	56,123
Dividends on common stock	261,300	250,054
Purchase of treasury stock	-	92,500
INCREASE IN WORKING CAPITAL	$ 158,000	$ 183,403
INCREASE (DECREASE) IN WORKING CAPITAL COMPONENTS:		
Cash	$ 361,772	$ (113,559)
Notes and accounts receivable	1,364,340	(189,513)
Foreign taxes receivable	1,171,220	(480,121)
Prepaid expenses and other	576,760	3,195
Current assets of discontinued coal operation	(499,721)	892,844
Notes payable to bank	24,216	(550,000)
Accounts payable	(1,033,507)	(224,290)
Income taxes	(998,274)	(51,205)
Accrued interest, expenses and other	(320,981)	(16,527)
Provision for operating losses from discontinued coal operation	(450,000)	-
Payable to joint interest owners	(146,773)	280,429
Current portion of long-term debt	108,948	632,150
INCREASE IN WORKING CAPITAL	$ 158,000	$ 183,403

See notes to consolidated financial statements

B A R N W E L L I N D U S T R I E S , I N C .

AND SUBSIDIARIES

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

YEARS ENDED SEPTEMBER 30, 1980 AND 1979

1. SIGNIFICANT ACCOUNTING POLICIES

Principles of consolidation

All majority owned subsidiaries are included in the accompanying consolidated financial statements. All significant intercompany accounts and transactions have been eliminated.

Inventory

Inventory is stated at the lower of cost (first-in, first-out method) or market.

Oil and gas properties

The Company follows the method of full cost accounting. Accordingly, all costs incurred in the acquisition, exploration and development of oil and gas reserves, including unproductive wells, are capitalized to the extent of the discounted present value of the Company's estimated recoverable reserves as determined by independent petroleum engineers. Depletion, depreciation and amortization of all such costs are provided by the unit-of-production method based upon estimated recoverable reserves of all properties. Depletion and amortization per dollar of oil and gas revenues was 13% in 1980 and 14% in 1979. The gain or loss on disposition of minor producing oil and gas properties is credited or charged to accumulated depletion, depreciation and amortization.

Coal properties

Coal properties are being depleted on the unit-of-production method based on estimated recoverable coal reserves as determined by independent coal engineers.

Geothermal properties

Costs incurred in the acquisition and development of geothermal properties are capitalized on a full cost method similar to oil and gas.

Contract drilling

Income from contract drilling operations are recorded primarily under the completed-contract method of accounting.

Property and equipment

Depreciation of coal mining and other property and equipment is provided primarily on a straight-line basis over the estimated useful lives of the property, principally ten years. All property additions and betterments are capitalized while the cost of repairs and maintenance is charged to expense as incurred. Gain or loss on sales or dispositions of other property is credited or charged to income.

Amortization of organization costs

Costs incurred in the organization of certain subsidiaries are amortized on a straight-line basis over 60 months.

Taxes on income

Intangible development, exploration, geophysical and other related costs incurred in connection with the exploration and development of oil and gas properties have been expensed in earlier periods for United States and Canadian income tax purposes rather than for financial statement purposes. Deferred taxes have been provided on these timing differences on a comprehensive basis to the extent of benefit received (Note 2).

Retirement plan

The Company policy is to fund retirement costs accrued. Prior service costs are amortized over 30 years.

Earnings/(loss) per share

Earnings/(loss) per common and common equivalent share are based on the weighted average number of shares outstanding during the years (1,292,934 in 1980 and 1,249,452 in 1979).

The effect of the assumed exercise of all stock options having an exercise price less than the average market price of the Company's common stock is not presented in that the effect on discontinued operations is antidilutive and the effect on continuing operations is less than 3%.

Reclassifications

Certain reclassifications have been made to the 1979 financial statements to conform to classifications made in the 1980 statements.

2. CHANGES IN ACCOUNTING

In December 1978, the Securities and Exchange Commission (SEC) issued Accounting Series Release (ASR) 258 which prescribes the method of full cost accounting which must be used by oil and gas exploration and production companies reporting to the SEC. Prior to 1980, the Company followed a form of full cost accounting which differed in some respects from that specified by ASR 258. The Company used a combined United States and Canada full cost pool whereas ASR 258 specifies a separate pool for eacn country. Also, the Company had recognized profits from the sales of partial interest in certain unproved properties although all of its costs in such properties had not been recovered. The accompanying financial statements have been retroactively restated to reflect the form of full cost accounting prescribed by ASR 258. The effect of the restatement was a reduction of retained earnings at September 30, 1978 of $1,301,464, and corresponding reductions of oil and gas properties and deferred income taxes of $1,410,461 and $108,997, respectively. For the year ended September 30, 1979, earnings from continuing operations were reduced and the net loss was increased by $148,881 ($.12 per share).

Additionally, Statement No. 19 of the Financial Accounting Standards Board requires that comprehensive interperiod income tax allocation by the deferred method be followed by oil and gas producing companies for intangible drilling and development costs and other costs associated with the exploration for and development of oil and gas reserves that enter into the determination of taxable income and accounting income in different periods. Previously, Statement No. 9 of the Financial Accounting Standards Board, which was superceded by Statement No. 19, required such interperiod tax allocation only for periods commencing after December 31, 1974. Accordingly, the accompanying financial statements have been restated to provide deferred taxes for such timing differences which occurred prior to January 1, 1975. The effect of such restatement was to reduce retained earnings at September 30, 1978 by $578,983 and to increase deferred taxes at that date by a corresponding amount.

3. ACQUISITION OF SUBSIDIARIES

(a) In May 1980, the Company acquired 80% of the outstanding common stock of Water Resources International, Inc. ("WRI") (a contract drilling company) and of Geothermal Exploration & Development Corp. ("GEDCO") for $2,138,000 in cash (of which $840,000 was placed in escrow) and 60,000 shares of common stock, valued at $840,000 based upon the market value of the Company's common stock on the date of acquisition. Pursuant to the purchase agreement, the sellers in these transactions are entitled to receive an amount, not to exceed the $840,000 held in escrow, calculated in accordance with a formula based on the combined net earnings of WRI and GEDCO for the fiscal period February 1, 1980 to September 30, 1981.

In September 1980, the Company released $540,000 of the amount held in escrow in exchange for a demand promissory note collateralized by 60,000 shares of the Company's common stock, and additional securities owned by the original stockholders.

The acquisition of WRI and GEDCO was accounted for by the purchase method of accounting. The aggregate purchase price (excluding the amount contingently payable) was allocated to the assets acquired, and the results of operations of WRI and GEDCO are included in the consolidated financial statements from the date of acquisition. Included in other income is $483,625 realized on contracts of WRI that were in excess of the fair value of such contracts at the date of acquisition.

The following unaudited pro forma information represents consolidated earnings from continuing operations as if WRI and GEDCO had been acquired October 1, 1978:

	Unaudited	
	1980	1979
Total revenues	$14,070,000	$ 7,540,000
Net earnings from continuing operations	$ 1,750,000	$ 565,000
Earnings per share from continuing operations	$1.35	$ .45

(b) In August 1980 the Company acquired 100% of the outstanding common stock of Geothermal Exploration Co., Inc. ("Geothermal") for 30,000 shares of common stock valued at $420,000 based upon the market value of the Company's common stock at the date of acquisition. Among the restrictions placed on the Company's shares issued was that, for a period of three years from the date of acquisition, the shares issued would not be sold. One of the former stockholders of Geothermal was elected to the Board of Directors of the Company in August 1980 and has entered into a consulting agreement with the Company (Note 9). The primary assets of Geothermal are comprised of geothermal lease rights in the United States. An appraisal obtained from independent geothermal exploration and development consultants indicated that such leases had a fair market value, at the date of acquisition, in excess of the aggregate market value at that date of the shares issued.

The acquisition of Geothermal was accounted for by the purchase method of accounting and, therefore, the aggregate purchase price was allocated to the assets acquired. Geothermal has had no significant operations.

(c) In October 1979 the Company purchased all the common stock of Analex Oil & Gas Company, Inc. for $1,750,000. The only single asset of Analex was a working interest in the Company's major oil and gas property.

4. DISCONTINUED COAL OPERATIONS

In September 1980, the Board of Directors adopted a plan for the sale of the Company's coal mining operation. The plan indicates that the Company would continue to operate the mine until such time that a reasonable offer for its sale is obtained. Management believes the fair value of the coal mining operation to be in excess of its financial statement carrying value. The 1979 financial statements have been reclassified accordingly.

The consolidated statement of operations contains a provision of $450,000 for estimated future operating losses and costs that would be associated with a sale.

In the accompanying consolidated balance sheet, the assets of the discontinued coal operations are presented separately and are comprised as follows:

	September 30,	
	1980	1979
Current assets of discontinued coal operations:		
Cash	$ 45,543	$ 72,684
Accounts receivable, less allowance for doubtful accounts of $14,995 and $25,012, respectively	77,550	408,863
Coal inventory	794,305	936,739
Prepaid expenses	146,285	145,118
	$1,063,683	$1,563,404
Noncurrent assets of discontinued coal operations:		
Coal properties	$1,574,219	$1,511,472
Coal mining equipment	2,443,479	2,316,664
Land and buildings	20,373	20,373
Other property and equipment	61,869	60,652
	4,099,940	3,909,161
Accumulated depreciation and depletion	(674,768)	(383,391)
Total property and equipment	3,425,172	3,525,770
Recoupable royalties and other	223,820	134,575
	$3,648,992	$3,660,345

Operating losses related to discontinued coal operations for fiscal 1980 and 1979 are comprised as follows:

	September 30, 1980	September 30, 1979
Coal sales	$ 784,085	$1,176,520
Coal operating expenses	(1,729,949)	(868,576)
General and administrative expense	(86,096)	(40,528)
Depreciation and depletion	(299,297)	(269,508)
Interest	(741,304)	(476,793)
Loss from operations	$(2,072,561)	$ (478,885)

5. LONG-TERM DEBT

Long-term debt, including current maturities, at September 30, 1980 and 1979 is as follows:

	September 30, 1980	September 30, 1979
Demand production loan payable to a Canadian bank in quarterly installments commencing June 1983 through March 1986 as follows: 3 payments of $296,420, 1 payment of $321,400, 3 payments of $121,400, 5 payments of $21,400 and additional installment payments of $1,394,390 due June 1984, $350,000 due March 1985, and $428,100 due June 1986; with interest payable quarterly at U.S. prime (13-1/4% at September 30, 1980) plus 1%	$ 3,854,350	$ 3,854,390
Demand promissory note payable to a U.S. subsidiary of a Canadian bank in quarterly installments of $125,000 and increasing to $225,000 through March 1984, with a final installment of $1,900,000 in June 1984; with interest payable monthly, at U.S. prime plus 1% (Registrant)	4,350,000	4,800,000
Demand promissory note payable to a Canadian bank, due on or before June 1983; with interest payable monthly, at Canadian prime (12-1/4% at September 30, 1980) plus 1%	400,000	400,000
Demand promissory note payable to a U.S. subsidiary of a Canadian bank due on or before June 1983; with interest payable monthly, at U.S. prime plus 1% (Registrant)	1,000,000	1,000,000

	September 30, 1980	September 30, 1979
Demand promissory note payable to a U.S. subsidiary of a Canadian bank in quarterly installments of $50,000 and increasing to $150,000 through June 1986 with a final installment of $1,000,000 in June 1986; with interest payable monthly at U.S. prime plus 1% (Registrant)	$ 3,000,000	$ -
Demand promissory note payable to a U.S. subsidiary of a Canadian bank in quarterly installments of $50,000 and increasing to $75,000 through September 1986 with a final installment of $1,250,000 in December 1986; with interest payable monthly at U.S. prime plus 1% (Registrant)	2,500,000	-
Note payable to a U.S. bank due in quarterly installments, inclusive of interest at 13-3/4%, of $26,541 through June 1985	400,000	-
Note payable to individuals due in November 1982 with interest payable semi-annually December and June at U.S. prime plus 1/2 of 1%	300,000	-
Notes payable to individuals, for the purchase of treasury stock, due in quarterly installments of approximately $32,000, through October 1987; with interest payable quarterly at 9% (Registrant)	917,850	1,044,450
Other	361,215	445,442
	17,083,415	11,544,282
Less current portion of long-term debt (Registrant portion, $729,600 and $576,600 at September 30, 1980 and 1979, respectively)	852,652	961,600
	$16,230,763	$10,582,682

Notwithstanding the demand feature of the bank loans, the bank has advised management that it will not demand payment as long as the specified repayment schedules are maintained and the Company is not otherwise in default on its obligations. The loans are subject to periodic and at least annual review by the bank. In addition, the Company is contingently liable for the repayment of an additional $575,000 of production loans applicable to the portion of the Company's interest in the properties earned by third parties under turnkey drilling and development contracts.

The bank loans are collateralized by the Company's interests in its major oil and gas producing properties and substantially all of the Company's property and equipment.

At September 30, 1980, the projected maturities of long-term debt are as follows:

Year ending September 30,	Amount
1981	$ 852,652
1982	1,600,910
1983	3,551,702
1984	5,501,520
1985	1,589,423
Thereafter	3,987,208

No compensating bank balances are required on any of the Company's indebtedness.

At September 30, 1980 the Company had unused lines of credit of approximately $1,595,000.

At September 30, 1980 the Company had short-term debt of $525,784 bearing interest at 12.9%. During 1980 and 1979, the maximum aggregate short-term debt at any month-end, exclusive of demand production loans, was approximately $1,900,000 and $1,162,500, respectively, and the average aggregate short-term debt was approximately $1,054,000 and $586,000, respectively. The approximate average interest rate on short-term debt for the years ended September 30, 1980 and 1979 was 14.6% and 12.4%, respectively.

6. DEFERRED PRODUCTION REVENUE

During 1980 and 1979, the Company received approximately $905,000 and $265,000, respectively, in accordance with the "take or pay" provision of a gas sales contract. The contract requires the purchaser to pay for a minimum quantity of gas each year, whether or not such minimum quantity is delivered. The purchaser is entitled to recoup such undelivered quantities in future years. The amount deferred will be included in revenues in the years in which such gas is actually produced and delivered.

7. TAXES ON INCOME

The components of the provisions for income taxes, consisting solely of foreign taxes, are as follows:

	1980	1979
Current	$(246,163)	$ 68,785
Deferred	370,732	367,505
	$ 124,569	$436,290

The Canadian Federal Government denies the deduction of royalty payments and similar payments to the Provincial governments, which results in increased Canadian federal income taxes. The Province of Alberta grants tax rebates and certain other credits to provide some measure of relief from the additional federal tax levy.

A reconciliation of the reported taxes on income from continuing operations and the amount computed by multiplying the earnings before taxes on income by the United States statutory tax rate is as follows:

	Year ended September 30, 1980	1979
Tax computed by applying statutory rate	$ 624,467	$278,864
Effect of foreign tax provision on the total tax provision	(135,093)	157,426
Revision of prior years' corporate overhead allocations to foreign subsidiaries	(336,952)	-
Other	(27,853)	-
	$ 124,569	$436,290

In 1980, the Company determined that the allocation of corporate overhead among subsidiaries in certain prior years did not reflect all factors which could have been considered at the time the allocations were made. After studying these factors, the Company has revised its intercompany overhead allocations, which affected its tax provision for the year by $336,952 as shown above thereby increasing earnings from continuing operations and net earnings by $336,952 ($.26 per share).

At September 30, 1980, for financial statement purposes, the Company had net operating loss and investment tax credit carryforwards of approximately $400,000 and $255,000, respectively. For United States income tax purposes the Company has investment tax credit carryforwards of $255,000. For federal income tax purposes there are no operating loss carryforwards in that any carryforwards that previously existed were utilized to offset taxable income generated from a tax merger of a subsidiary acquired in 1980. The effect of the tax merger is that the tax basis of the assets of the subsidiary is in excess of the financial statement basis of such assets. The excess tax basis will result in tax benefits for financial statement purposes in the years that such excess basis is depreciated.

8. COMMON STOCK

Under a qualified stock option plan, options to purchase the Company's common stock may be granted to officers and key employees of the Company and its subsidiaries. Options granted under this plan are to be exercisable at prices not less than the fair market value of the Company's common stock on the date of grant, become exercisable 25% annually beginning one year from the date of grant and expire five years from date of grant.

Transactions during fiscal 1980 and 1979 were as follows:

	Shares		
		Options	
	Reserved	Outstanding	Exercisable
Balances at September 30, 1978	155,000	77,500	46,875
Became exercisable ($6.75 - $9.875 per share)	-	-	13,125
Exercised ($6.75 per share)	(15,000)	(15,000)	(15,000)
Cancelled ($7.50 - $9.875 per share)	-	(25,000)	(21,250)
Balances at September 30, 1979	140,000	37,500	23,750
Became exercisable ($9.875 per share)	-	-	6,250
Exercised ($6.75 per share)	(10,000)	(10,000)	(10,000)
Cancelled ($9.875 per share)	-	(2,500)	(1,250)
Balances at September 30, 1980	130,000	25,000	18,750

At September 30, 1980 the grant price per share was $9.875; at September 30, 1979 the grant price per share ranged from $6.75 to $9.875.

During fiscal 1979, the Company acquired 10,000 shares of its outstanding common stock at an aggregate cost of $92,500. During 1980, the Company issued 90,000 shares of treasury stock in the acquisition of majority owned subsidiaries (Note 3).

9. COMMITMENTS

a. The Company has a noncontributory retirement plan covering all of its employees. Retirement expense for the years ended September 30, 1980 and 1979 was approximately $59,000, and $25,000, respectively, which includes amortization of prior service costs. The actuarially computed value of vested benefits for the plan as of September 30, 1979, the date of the latest report, exceeded the value of the plan's assets by $90,800.

EXHIBIT "E"
Page 14

b. The Company has commitments to certain participants, aggregating approximately $3,100,000 at September 30, 1980, to repurchase at the participants' option their interest in certain ventures. The Company believes that these rights will never be exercised because the value of oil and gas properties involved is in excess of the repurchase price, and substantially all of the above rights are payable in the Company's common stock.

c. The Company has established a Profit Participation Fund in the amount of 10% of the annual net income before taxes and depreciation, depletion, and amortization earned by the Company in excess of $1,750,000.

d. The Company has entered into a consulting agreement commencing June 1, 1980 with a director of the Company for annual compensation of $42,000 for five years. The director will also receive 15% of the Profit Participation Fund described in Note 9.c. above.

10. SEGMENT INFORMATION

The Company operates in three industries: oil and gas, contract drilling and coal mining. Segment information as of and for the years ended September 30, 1980 and 1979 is as follows:

	Year ended September 30, 1980				
	Sales	Operating profit/ (loss)	Depreciation, depletion and amortization	Capital expenditures	Identifiable assets
Oil and gas	$ 4,645,649	$ 2,217,872	$ 634,524	$ 3,394,997	$13,918,775
Contract drilling	2,488,383	485,742	134,845	657,089	6,127,830
Corporate and other	180,453	210,938	2,540	614,409	2,671,823
Total continuing operations	7,314,485	2,914,552	771,909	4,666,495	22,718,428
Discontinued coal	784,085	(1,781,257)	299,297	198,564	4,677,441
Total	$ 8,098,570	1,133,295	$ 1,071,206	$ 4,865,059	$27,395,869
Translation gain and other		4,774			
Minority interest in earnings		(60,549)			
Interest expense (net of interest income of $74,027)		(2,242,543)			
Loss before taxes		$(1,165,023)			

	Year ended September 30, 1979				
	Sales	Operating profit/ (loss)	Depreciation, depletion and amortization	Capital expenditures	Identifiable assets
Oil and gas	$ 4,245,052	$ 1,667,505	$ 644,073	$ 710,453	$10,907,477
Corporate and other	157,411	(82,997)	-	113,574	1,083,033
Total continuing operations	4,402,463	1,584,508	644,073	824,027	11,990,510
Discontinued coal	1,176,520	(2,092)	269,508	476,793	5,162,029
Total	$ 5,578,983	1,582,416	$ 913,581	$ 1,300,820	$17,152,539
Translation loss		(35,648)			
Interest expense (net of interest income of $46,888)		(1,419,428)			
Earnings before taxes		$ 127,340			

Information as to the Company's operations by geographic area is as follows:

	Year ended September 30, 1980		
	Identifiable assets	Depreciation, depletion and amortization	Capital expenditures
Canada	$13,918,775	$ 634,524	$ 3,394,997
United States	13,477,094	436,682	1,470,062
Consolidated total	$27,395,869	$ 1,071,206	$ 4,865,059

	Year ended September 30, 1979		
	Identifiable assets	Depreciation, depletion and amortization	Capital expenditures
Canada	$10,907,477	$ 644,073	$ 710,453
United States	6,245,062	269,508	590,367
Consolidated total	$17,152,539	$ 913,581	$ 1,300,820

The Company conducts its oil and gas operations in Canada and its contract drilling and coal mining operations in the United States. Accordingly, the above tables showing earnings before income taxes are also applicable to operations by geographic area.

A contract with a Canadian utility for the sale of gas accounted for approximately 69% and 80% of the Company's total oil and gas sales in fiscal 1980 and 1979, respectively.

The caption "corporate and other" for 1980 includes the Company's investment in geothermal properties.

11. SUPPLEMENTARY OIL AND GAS INFORMATION

The following information relates to the Company's oil and gas operations, all of which are conducted in Canada.

(A) Reserves (unaudited)

	Year ended September 30, 1980 Oil (Barrels)	1980 Gas (MMCF)	1979 Oil (Barrels)	1979 Gas (MMCF)
Proved developed and undeveloped:				
Beginning of year	1,249,456	48,702	1,126,441	49,543
Revisions of previous estimates	227,675	(457)	220,196	1,407
Purchases of minerals-in-place	26,006	3,041	-	-
Production	(99,457)	(1,635)	(97,181)	(2,248)
Sales of minerals-in-place	-	(1,943)	-	-
End of year	1,403,680	47,708	1,249,456	48,702
Proved developed reserves				
Beginning of year	1,076,819	34,302	1,076,385	41,047
End of year	1,337,898	37,862	1,076,819	34,302

(B) Estimated Future Revenues (Unaudited)

	Proved developed and undeveloped	Proved developed
Estimated future net revenues for years ended September 30,		
1981	$ 7,814,000	$ 7,865,000
1982	7,423,000	7,598,000
1983	7,388,000	7,224,000
Thereafter	93,793,000	78,910,000
Total	$116,418,000	$101,597,000
Present value of estimated future net revenues (discounted at 10%)	$ 54,966,000	$ 49,336,000

(C) Capitalized Costs

At September 30, 1980 and 1979 approximately $14,192,594 and $11,704,058, respectively, of costs of oil and gas properties were capitalized. The amount of capitalized costs relating to unproved properties was $744,241 at September 30, 1980 and $793,957 at September 30, 1979. Depreciation, depletion and amortization of capitalized oil and gas property costs was $592,416 for 1980 and $600,015 for 1979.

(D) Costs and Revenues

	Year ended September 30, 1980	1979
Property acquisition costs	$1,367,307	$ 18,413
Exploration costs	-	-
Development costs	$ 857,365	$ 390,090
Production costs	$ 837,103	$ 794,568

All oil and gas revenues relate to production from the Company's proved oil and gas reserves. Net revenues from production for years ended September 30, 1980 and 1979 were $4,645,649 and $4,245,052, respectively.

(E) Reserve Recognition Accounting (Unaudited)

In 1979, the Securities and Exchange Commission (SEC) released amendments to Regulation S-X which proposed a new method of accounting called Reserve Recognition Accounting or "RRA." This proposal requires that most gas and oil producing companies present a supplemental earnings summary on the basis of RRA beginning with fiscal years ending after December 25, 1979. Under RRA, a valuation of the Company's proved reserves would be recognized as assets, and a valuation of additions to proved reserves from new field discoveries, extensions of previous discoveries and other changes in proved reserves would be included in earnings as they occur. Under present generally accepted accounting principles and SEC rules, including the full cost method followed by the Company, assets reported in the balance sheet consist of certain historical capitalized costs. Further, under present methods of accounting, earnings are recognized as gas and oil is produced.

Reserve Recognition Accounting is based on discounted cash flow or "present value" concepts and methodology, and is not intended to result in a "current value" or "fair market value" basis as there are other important factors to be considered in such evaluations. RRA is based on the recognition of revenue and income at the time proved reserves are determined. Current economic conditions and a uniform discount factor have been specified by the SEC in order to achieve uniformity in assumptions and to provide a comparable basis for developing the information presented.

The SEC recognizes that there are a number of conceptual and implementation issues with respect to RRA that still must be resolved and views the development of RRA as an evolutionary process. Therefore as further experience is gained, the SEC has indicated they will reconsider various aspects of the uniform methodology for developing the reserve value information and the supplemental summary of oil and gas producing activities before making a decision on requiring the use of RRA for the primary financial statements.

The Company cautions against projecting future RRA results on one year's activity. The results of gas and oil producing activities occur over many years. In addition, the economic results of gas and oil activities are subject to various statutory and regulatory agencies which could have substantial impact on the results of future operations - both under generally accepted accounting principles and RRA.

Summary of Oil and Gas Producing
Activities on the Basis of
Reserve Recognition Accounting

	Year ended September 30, 1980
	(Thousands)
Revisions to estimates of reserves proved in prior years:	
Increases in prices	$ 13,206
Other	2,143
Accretion of discount	3,937
	19,286
Excess of future value of reserves sold and current year capital expenditures over proceeds from reserves sold	(522)
Amortization of excess future value of reserves purchased over purchase price	34
General and administrative costs	(590)
	18,208
Provision for income taxes	7,559
Results of oil and gas producing activities on the basis of Reserve Recognition Accounting	$ 10,649

Changes in Present Value of
Estimated Future Net Revenues From
Proved Oil and Gas Reserves

	Year ended September 30, 1980
	(Thousands)
Increases:	
Revisions	$ 19,286
Purchase of reserves in place	2,341
Subtotal	21,627
Decreases:	
Sales of oil and gas, net of future production costs of $737,000	3,909
Sales of reserves in place	1,152
Subtotal	5,061
Net increase	16,566
Beginning of year	38,400
End of year	$ 54,966

NOTES TO RESERVE RECOGNITION ACCOUNTING STATEMENTS

1. GENERAL

Reserves, Future Net Revenue, and 10% Discount Present Value of Future Net Revenue have been prepared by independent engineers, in compliance with the requirements of the Securities and Exchange Commission. The basis for preparation of the data presented is as follows:

(a) Oil and gas prices at September 30, 1980 were based on levels in effect at that time and were not escalated in the future. Prices at September 30, 1979 were based on levels in effect at that time, and price increases which took effect during fiscal 1980 which had been agreed upon and announced by Provincial and Federal governmental agencies at September 30, 1979. The probable escalations resulting from future increased prices could result in a significant increase in the future gross revenues from reserves.

(b) Future development and operating costs were estimated assuming that existing economic conditions will continue over the economic life of the individual leases and costs were not escalated for the future.

(c) Present value of future net revenues was calculated using a ten per cent discount factor for mid year receipts, compounded semi-annually.

2. ADDITIONS TO ESTIMATED PROVED RESERVES

There were no significant new reserves discovered during the fiscal year ended September 30, 1980.

3. TOTAL REVISIONS OF PRESENT VALUE OF FUTURE NET REVENUES

Total revisions are determined by taking the difference between the end of the year present value amount and the beginning of the year present value amount adjusted for current year sales, net of production and development costs.

(a) Revisions Due to Price Changes

Calculated by taking the average price change, by product, between year end 1979 and year end 1980 multiplied by the beginning of year reserve quantities (reserves at September 30, 1979). The resulting differential revenue quantity is discounted by multiplying it by an average discount factor determined by the ratio of the beginning of year present value of future net revenue to beginning of year future net revenue.

(b) Revisions Due to Accretion of Discount

The incremental change in the 10% discount factor from one year to the next was determined to be approximately 9%. When this factor is applied to beginning of the year present value amount it results in a reasonable approximation of the revisions due to accretion of discount, which is acceptable to the Securities and Exchange Commission.

(c) Other Revisions

Other revisions is an aggregation of numerous factors (e.g., changes in estimated future development costs, revised production schedules, etc.) The amount of "other revisions" is developed directly from the known values of total revisions, revisions due to price changes and revisions due to accretion of discount;

therefore, "other revisions" equals total revisions less revisions due to price changes less revisions due to accretion of discount.

4. PROVISION FOR TAXES

Taxes are determined by estimating the future taxes associated with future net revenues from proved reserves giving consideration to the year in which actual deductions are estimated to occur. The resulting tax stream is discounted using a 10% discount rate. The provision for income taxes represents the present value of future taxes estimated at September 30, 1980 less income taxes estimated at September 30, 1979 plus the current year taxes associated with oil and gas producing activities during the year.